

AMENDMENTS TO THE CLAIMS:

Claims 97-112 are canceled without prejudice or disclaimer. Claims 113-120 are added. The following is the status of the claims of the above-captioned application, as amended.

Claims 1-112 (Canceled).

Claim 113 (New). A method for selecting a variant enzyme of a reference enzyme, wherein the variant enzyme causes a lower immunogenic response in a mammal than the reference enzyme, comprising

- (a) (i) preparing a recombinant expression vector comprising a DNA sequence encoding the reference enzyme;
- (ii) transforming a host cell with the vector and expressing the reference enzyme in the host cell;
- (iii) isolating the reference enzyme from the host cell;
- (iv) immunizing an animal with the reference enzyme; and
- (v) isolating antibodies reactive with the reference enzyme from the animal;
- (b) (i) preparing recombinant vectors comprising DNA sequences encoding one or more variant enzymes, wherein the one or more variant enzymes differ from the reference enzyme by one or more amino acid substitutions at one or more positions in the amino acid sequence of the reference enzyme;
- (ii) transforming host cells with the vectors and expressing the variant enzymes in the host cells;
- (iii) isolating the variant enzymes from the host cells;
- (iv) immunizing animals with the variant enzymes; and
- (v) isolating antibodies reactive with the one or more variant enzymes;
- (c) mapping one or more epitopes of the reference enzyme with immunological techniques by incubating the antibodies raised in steps (a) and (b) with the reference enzyme and at least one of the one or more variant enzymes; and
- (d) selecting a variant enzyme, which (i) has an altered amino acid sequence of one or more epitopes of the reference enzyme, (ii) has enzymatic activity, and (iii) evokes a lower immunogenic response in an animal than the reference enzyme.

Claim 114 (New). The method of claim 113, wherein the reference enzyme is a detergent enzyme.

Claim 115 (New). The method of claim 114, wherein the detergent enzyme is an amylase, a cellulase, a lipase, an oxidase, or a protease.

Claim 116 (New). The method of claim 113, wherein the reference enzyme is an amylase, a cellulase, a lipase, or a lyase.

Claim 117 (New). A method for selecting a variant enzyme of a reference enzyme, wherein the variant enzyme causes a lower immunogenic response in a mammal than the reference enzyme, comprising

- (a) (i) preparing a recombinant expression vector comprising a DNA sequence encoding the reference enzyme;
- (ii) transforming a host cell with the vector and expressing the reference enzyme in the host cell;
- (iii) isolating the reference enzyme from the host cell;
- (iv) immunizing an animal with the reference enzyme;
- (v) isolating cells producing antibodies reactive with the reference enzyme from the animal; and
- (vi) using said antibody-producing cells to prepare polyclonal antibodies against the reference enzyme;
- (b) (i) preparing recombinant vectors comprising DNA sequences encoding one or more variant enzymes, wherein the one or more variant enzymes differ from the reference enzyme by one or more amino acid substitutions at one or more positions in the amino acid sequence of the reference enzyme;
- (ii) transforming host cells with the vectors and expressing the variant enzymes in the host cells;
- (iii) isolating the variant enzymes from the host cells;
- (iv) immunizing animals with the variant enzymes;
- (v) isolating cells producing antibodies reactive with the variant enzymes from the animals; and

(vi) using said antibody-producing cells to prepare polyclonal antibodies reactive with the one or more variant enzymes;

(c) mapping one or more epitopes of the reference enzyme with immunological techniques by:

(i) incubating the polyclonal antibodies prepared in steps (a) and (b) with the reference enzyme and with at least one variant enzyme; and

(ii) incubating the mixture from step (i) with another enzyme selected from the group consisting of the reference enzyme and a variant enzyme;

(d) selecting a variant, which (i) has an altered amino acid sequence of one or more epitopes of the reference enzyme, (ii) has enzymatic activity and (iii) evokes a lower immunogenic response in an animal than the reference enzyme.

Claim 118 (New). The method of claim 117, wherein the reference enzyme is a detergent enzyme.

Claim 119 (New). The method of claim 118, wherein the detergent enzyme is an amylase, a cellulase, a lipase, an oxidase, or a protease.

Claim 120 (New). The method of claim 117, wherein the reference enzyme is an amylase, a cellulase, a lipase, or a lyase.